

## Chapter 7

# Confined spaces



### What is the hazard?

Confined spaces are deadly spaces - including for those that go to rescue their work colleagues.

Numbers of AMWU members have lost their lives due to entry into confined or contaminated, restricted spaces. These deaths are all preventable and we know what needs to be done. There are no excuses for not following the Regulations, as a minimum.

### Restricted spaces

If the work space is restricted and there is a risk of lack of oxygen or airborne contaminants, then the basic principles of how to enter and work in a confined space apply.

Many restricted spaces are also very hazardous, so similar approaches as those used for confined spaces are recommended. The only difference is that Entry Permits may not be necessary, but the risks must be assessed and controlled.

**It is not unusual for PCBU/employers to spend unnecessary time on deciding if the restricted work areas meet the definition of a confined space. This can and has led to tragedy.**

*SafeWork SA Inspector John Garvey says it is common for workers who aren't trained as emergency rescuers to "rush in" and try to rescue colleagues in confined spaces:*

*"Workers believe they can rescue others quickly," he says.*

*"That's a false belief, in fact, the (worker) who has gone down and is unconscious may survive, and (the rescuer) may die. Another common misconception is that the atmosphere in a confined space doesn't need to be tested after the area has been purged of gas. When a worker enters a confined space, they can disturb residual fluids by walking on wet surfaces for example and re-contaminate the atmosphere. In some cases, employers only need to test the atmosphere once to ensure it is safe. In other cases, they must continually monitor the area. Another misconception is that anybody can work in a confined space and workers don't necessarily have to be trained to do so. Also, some people are of the belief that you don't have to have anybody on standby around the confined space, and that's untrue as well."*

A Canadian video highlights how a confined space can change between being safe and dangerous. <https://www.worksafefbc.com/en/resources/health-safety/videos/confined-spaces/safe-yesterday-deadly-today-1-of-3?lang=en>

The most common hazards of confined spaces are atmospheric contamination, wet surfaces, obstructions and loose materials:

- Atmospheric issues include oxygen being too low (below 19.5%) or too high (above 23.5%), which can lead to respiratory problems and the presence of contaminants, such as gases and vapours that can be flammable and cause explosions.
- Workers are also at risk of musculoskeletal injuries when obstructions require them to "manipulate their body quite severely" to conduct their work.

Confined-space workers must be able to stay in constant communication with a person outside the enclosed or restricted area, so the person knows as soon as anything goes wrong.

**The Regulations** require that the PCBU/employer consider the following about any confined space that may require entry:

- Whether the work can be carried out without the need to enter the confined space
- The type of confined space
- The nature of the confined space
- The concentration of oxygen
- The concentration of airborne contaminants in the confined space
- The type of work required to be carried out in the confined space - generation of fumes, diminution of oxygen, heat etc.
- Type of emergency procedures, including rescue procedures.

## 7. Confined spaces

### A confined space entry permit must:

- Be completed by a competent person
- Be in writing with the following information:
  - the confined space to which the permit relates
  - names of persons permitted to enter the space
  - period of time during which the work in the space will be carried out
  - measures to control risk associated with the proposed work in the space.

### All confined spaces must be signed, and the signs need to include the following:

- Identify the confined space
- Inform workers that they must not enter the space unless they have a confined space entry permit
- Be clear and prominently located next to each entry to the space.

### When a worker enters a confined space there must be:

- Continuous communication with the worker from outside the space
- Monitoring of conditions within the space by a standby person who, if possible, can observe the work being carried out.

### Specific control – atmosphere

Any work carried out in a confined space (this applies to restricted spaces as well):

- Purging or ventilation of any contaminant in the atmosphere of the space is carried out
- Pure oxygen or gas mixtures with oxygen in a concentration exceeding 21% by volume are not used for purging or ventilation:
  - the atmosphere of the space has a safe oxygen level or
  - if the oxygen level is less than 19.5% by volume - any worker supplied with air supplied respiratory equipment
- The concentration of any flammable gas, vapour or mist in the atmosphere of the space is less than 5% of its LEL:
  - if gas, vapour or mist in a confined space to less than 5% of its LEL and equal to or greater than 5%, but less than 10% of its LEL - the worker is immediately removed from the space unless a suitably calibrated, continuous-monitoring flammable gas detector is used in the space, or
  - equal to or greater than 10% of its LEL - the worker is immediately removed from the space.

Emergency procedures must be established including first aid and rescue procedures including that

- first aid and rescue procedures are initiated from outside the confined space
- the entry and exit openings of the confined space are large enough to allow emergency access
- entry and exit openings are not obstructed
- plant, equipment and personal protective equipment provided for first aid or emergency rescue are maintained in good working order.

**More detail is in the Regulation and Australian Standards.**

### Key points include:

A confined space is an enclosed or partially enclosed space that is not designed or intended to be primarily occupied by a person, and there is a risk of lack of oxygen, fire or explosion, or airborne contaminants or engulfment. Therefore:

- Entry Permits must be issued for every entry into a confined space
- Confined spaces must have signage
- Any entry into a confined space must have a continuous communication with the worker from outside the confined space.
- Entry and exit openings must be large enough to allow for emergency access.
- Anyone entering/working in a confined space must be trained in emergency procedures and the use of emergency equipment. This includes the persons outside the confined space who may have to enter in an emergency.

### Remember

Often a restricted space will have the above characteristics but doesn't meet the definition. The AMWU strongly advises that the same procedures for confined space work are used for restricted areas – it can be a matter of life or death.